

MILLER

10/550459

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1

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DICTIONARY FILE UPDATES: 17 MAR 2008 HIGHEST RN 1008496-49-8

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FILE COVERS 1907 - 18 Mar 2008 VOL 148 ISS 12
FILE LAST UPDATED: 17 Mar 2008 (20080317/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que
L53 8 SEA FILE=REGISTRY ABB=ON (108-18-9/BI OR 108-67-8/BI OR
111-26-2/BI OR 12003-65-5/BI OR 1309-48-4/BI OR 7324-58-5/BI
OR 7440-21-3/BI OR 7440-22-4/BI)
L58 STR

Ag 1

NODE ATTRIBUTES:

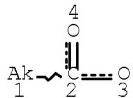
DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 1

STEREO ATTRIBUTES: NONE

L60 STR



NODE ATTRIBUTES:

CONNECT IS E1 RC AT 1
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED
 ECOUNT IS M2-X6 C AT 1

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

L62	172 SEA FILE=REGISTRY SSS FUL	L60 AND L58
L63	113 SEA FILE=REGISTRY ABB=ON	L62 NOT 1-20/NR
L64	57 SEA FILE=REGISTRY ABB=ON	L63 AND 1-2/NC
L65	51 SEA FILE=REGISTRY ABB=ON	L64 NOT P/ELS
L66	1 SEA FILE=REGISTRY ABB=ON	L65 AND L53
L67	1 SEA FILE=REGISTRY ABB=ON	HEXYLAMINE/CN
L68	1 SEA FILE=REGISTRY ABB=ON	ISOBUTYLAMINE/CN
L69	1 SEA FILE=REGISTRY ABB=ON	DI-SEC-BUTYLAMINE/CN
L70	1 SEA FILE=REGISTRY ABB=ON	TRIETHYLAMINE/CN
L71	1 SEA FILE=REGISTRY ABB=ON	BENZYLAMINE/CN
L72	1 SEA FILE=REGISTRY ABB=ON	ETHANOLAMINE/CN
L73	1 SEA FILE=REGISTRY ABB=ON	DIISOPROPYLAMINE/CN
L74	8 SEA FILE=REGISTRY ABB=ON	(L66 OR L67 OR L68 OR L69 OR L70 OR L71 OR L72 OR L73)
L75	1 SEA FILE=REGISTRY ABB=ON	ACETONITRILE/CN
L76	1 SEA FILE=REGISTRY ABB=ON	VALERONITRILE/CN
L77	1 SEA FILE=REGISTRY ABB=ON	BENZONITRILE/CN
L78	1 SEA FILE=REGISTRY ABB=ON	PROPIONITRILE/CN
L79	4 SEA FILE=REGISTRY ABB=ON	(L75 OR L76 OR L77 OR L78)
L80	277 SEA FILE=HCAPLUS ABB=ON	L65
L81	80379 SEA FILE=HCAPLUS ABB=ON	L74
L82	52087 SEA FILE=HCAPLUS ABB=ON	L79
L83	8 SEA FILE=HCAPLUS ABB=ON	L80 AND (CVD OR CHEM?(2A)VAPOR?)
L86	6 SEA FILE=HCAPLUS ABB=ON	L83 AND (L81 OR L82)
L87	10 SEA FILE=HCAPLUS ABB=ON	L80 AND FILM?(3A)DEPOSIT?
L88	6 SEA FILE=HCAPLUS ABB=ON	L87 AND (L81 OR L82)
L89	5 SEA FILE=HCAPLUS ABB=ON	(L83 OR L87) AND (?AMINE? OR ?NITRILE?)
)	
L96	11 SEA FILE=HCAPLUS ABB=ON	L83 OR L86 OR L88 OR L89
L101	13 SEA FILE=HCAPLUS ABB=ON	(SILVER OR AG) (3A) ?CARBOXYLAT? AND FILM?(3A)DEPOSIT?

L102	17 SEA FILE=HCAPLUS ABB=ON (CVD OR CHEM? (3A)VAPOR?)	(SILVER OR AG) (3A)?CARBOXYLAT? AND
L103	1 SEA FILE=HCAPLUS ABB=ON ?NITRILE?)	(L101 OR L102) AND (?AMINE? OR
L104	2279 SEA FILE=HCAPLUS ABB=ON T	"CARBOXYLIC ACIDS, PROCESSES"+NT, PFT/C
L105	13 SEA FILE=HCAPLUS ABB=ON	L104(L)SILVER
L106	1 SEA FILE=HCAPLUS ABB=ON	L105 AND FILM?(3A)DEPOSIT?
L107	1 SEA FILE=HCAPLUS ABB=ON	L105 AND (CVD OR CHEM? (3A)VAPOR?)
L108	16 SEA FILE=HCAPLUS ABB=ON FILM?(3A)DEPOSIT?	(SILVER OR AG) (3A)?CARBOXYLIC? AND
L109	6 SEA FILE=HCAPLUS ABB=ON (CVD OR CHEM? (3A)VAPOR?)	(SILVER OR AG) (3A)?CARBOXYLIC? AND
L110	13 SEA FILE=HCAPLUS ABB=ON	L96 OR L103 OR L106 OR L107 OR L109
L111	3 SEA FILE=HCAPLUS ABB=ON (L81 OR L82)	(L101 OR L102 OR L108 OR L109) AND
L112	13 SEA FILE=HCAPLUS ABB=ON	L110 OR L111

=> d l112 ibib abs ind hitstr 1-13

L112 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:1356624 HCAPLUS Full-text.
 DOCUMENT NUMBER: 146:105413
 TITLE: CVD-deposited composite
 films with metal antimicrobial agent and TiO2
 photocatalyst for protection or decontamination of
 substrates
 INVENTOR(S): Bedel, Laurent; Thollon, Stephanie; Emieux, Fabrice;
 Krebs, Thierry
 PATENT ASSIGNEE(S): Commissariat a l'Energie Atomique, Fr.
 SOURCE: Fr. Demande, 23pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2887560	A1	20061229	FR 2005-51799	20050628
FR 2887560	B1	20071012		
WO 2007000556	A2	20070104	WO 2006-FR50630	20060626
WO 2007000556	A3	20070524		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA				

PRIORITY APPLN. INFO.: FR 2005-51799 A 20050628
 AB A substrate (such as glass or silicon) is coated with a composite coating
 based on a metal having antimicrobial activity (such as Ag) and of a
 semiconductor oxide having a photocatalytic activity (such as TiO2). The

composite films are suitable for the protection or decontamination of substrate from micro-organisms.

CC 57-2 (Ceramics)
Section cross-reference(s): 10, 67

ST silver antimicrobial titania photocatalytic composite film silicon glass substrate

IT Ceramic composites
Decontamination
Glass substrates
Photolysis catalysts
(CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

IT Vapor deposition process
(chemical; CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

IT Antimicrobial agents
(composite films; CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

IT Ceramic coatings
(composites, antimicrobial and photocatalytic; CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

IT 7440-22-4, Silver, uses 7440-50-8, Copper, uses 7782-49-2, Selenium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(antimicrobial agent; CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

IT 13463-67-7, Titanium oxide (TiO₂), uses
RL: CAT (Catalyst use); USES (Uses)
(photocatalyst; CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

IT 546-68-9, Titanium tetrakisopropoxide 7324-58-5, Silver Pivalate
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

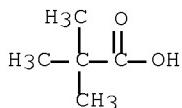
IT 108-18-9, Diisopropylamine 108-67-8, Mesitylene, uses
1330-20-7, Xylene, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

IT 7440-21-3, Silicon, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrates; CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

IT 7324-58-5, Silver Pivalate
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; CVD-deposited composite films with metal antimicrobial agent and TiO₂ photocatalyst for protection or decontamination of substrates)

RN 7324-58-5 HCPLUS

CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

IT 108-18-9, Diisopropylamine
 RL: NUU (Other use, unclassified); USES (Uses)
 (solvent; CVD-deposited composite films
 with metal antimicrobial agent and TiO₂ photocatalyst for protection or
 decontamination of substrates)
 RN 108-18-9 HCPLUS
 CN 2-Propanamine, N-(1-methylethyl)- (CA INDEX NAME)

i-Pr—NH—Pr-i

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 2 OF 13 HCPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:634026 HCPLUS Full-text
 DOCUMENT NUMBER: 145:116142
 TITLE: Preparation of silver or silver alloy nanoparticles on a substrate by chemical vapor deposition
 INVENTOR(S): Thollon, Stephanie; Luc, Fabien; Barrault, Joel;
 Valance, Sabine; Guelou, Erwan
 PATENT ASSIGNEE(S): Commissariat a l'Energie Atomique, Fr.; Centre National de la Recherche Scientifique; Universite de Poitiers
 SOURCE: Fr. Demande, 47 pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2880036	A1	20060630	FR 2004-53179	20041223
FR 2880036	B1	20070907		
WO 2006070130	A2	20060706	WO 2005-FR3264	20051223
WO 2006070130	A3	20070405		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA

EP 1828431 A2 20070905 EP 2005-850603 20051223

R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, YU

CN 101128619 A 20080220 CN 2005-80048631 20070823

PRIORITY APPLN. INFO.: FR 2004-53179 A 20041223
WO 2005-FR3264 W 20051223

AB A procedure is disclosed for chemical vapor deposition Ag or Ag alloy nanoparticles dispersed on a substrate. The deposition is carried out by using ≥1 Ag organometallic precursor in the presence of a gas mixture containing >50 volume% oxidizing reactive gas. The substrate contains ≥1 surface on which the Ag or ag alloy nanoparticles are dispersed. The resulting product is suitable for catalysts, optical and electronic devices, and H₂-permeable membranes.

CC 78-1 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 45, 52, 67, 76

ST silver nanoparticle chem vapor deposition; catalyst
silver nanoparticle; membrane hydrogen permeable silver nanoparticle;
electronic device silver nanoparticle; optical device silver nanoparticle

IT Membranes, nonbiological
(H₂-permeable; preparation of silver or silver alloy nanoparticles on substrate by chemical vapor deposition in production of)

IT Zeolites (synthetic), uses

RL: CAT (Catalyst use); USES (Uses)
(catalyst support for silver or silver alloy nanoparticles)

IT Vapor deposition process
(chemical; in preparation of silver or silver alloy nanoparticles on substrate)

IT Vapor deposition process
(plasma; in preparation of silver or silver alloy nanoparticles on substrate)

IT Amines, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(polyamines, nonpolymeric; solvent for preparation of silver or silver alloy nanoparticles on substrate by chemical vapor deposition)

IT Nanoparticles

(preparation of silver or silver alloy nanoparticles on substrate by chemical vapor deposition)

IT Dehydrogenation catalysts

Electronics

Epoxidation catalysts

Hydrogenation catalysts

Optical equipment

Oxidation catalysts

Reforming catalysts

(preparation of silver or silver alloy nanoparticles on substrate by chemical vapor deposition in production of)

IT Silver alloy, base

RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)

(preparation of silver or silver alloy nanoparticles on substrate by chemical vapor deposition)

IT 1306-38-3, Ceria (CeO₂), uses 1314-23-4, Zirconia, uses 1344-28-1,
Alumina, uses 7440-21-3, Silicon, uses 12597-69-2, Steel, uses

RL: CAT (Catalyst use); USES (Uses)
 (catalyst support for silver or silver alloy nanoparticles)

IT 124-38-9, Carbon dioxide, uses 7440-37-1, Argon, uses 7440-59-7,
 Helium, uses 7727-37-9, Nitrogen, uses 7782-44-7, Oxygen, uses
 10028-15-6, Ozone, uses

RL: TEM (Technical or engineered material use); USES (Uses)
 (in controlled atmospheric for preparation of silver or silver alloy
 nanoparticles
 on substrate by chemical vapor deposition)

IT 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses 7440-06-4,
 Platinum, uses 7440-16-6, Rhodium, uses 7440-44-0, Carbon, uses

RL: MOA (Modifier or additive use); USES (Uses)
 (in preparation of silver alloy nanoparticles on substrate by chem
 . vapor deposition)

IT 7324-58-5, Silver pivalate 22466-43-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (precursor in preparation of silver or silver alloy nanoparticles on
 substrate by chemical vapor deposition)

IT 7440-22-4P, Silver, preparation
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PNU (Preparation, unclassified); PREP (Preparation); PROC
 (Process)
 (preparation of silver or silver alloy nanoparticles on substrate by
 chemical vapor deposition)

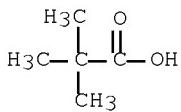
IT 75-05-8, Acetonitrile, uses 78-81-9,
 Isobutylamine 100-46-9, Benzylamine, uses
 100-47-0, Benzonitrile, uses 107-12-0,
 Propionitrile 108-18-9, Diisopropylamine
 108-67-8, Mesitylene, uses 108-88-3, Toluene, uses 110-59-8,
 Valeronitrile 110-82-7, Cyclohexane, uses 111-26-2, n-
 Hexylamine 111-65-9, n-Octane, uses 121-44-8,
 Triethylamine, uses 141-43-5, Ethanolamine,
 uses 626-23-3, Di-sec-butylamine 1330-20-7, Xylene,
 uses

RL: TEM (Technical or engineered material use); USES (Uses)
 (solvent for preparation of silver or silver alloy nanoparticles on
 substrate by chemical vapor deposition)

IT 7324-58-5, Silver pivalate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (precursor in preparation of silver or silver alloy nanoparticles on
 substrate by chemical vapor deposition)

RN 7324-58-5 HCAPLUS

CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

IT 75-05-8, Acetonitrile, uses 78-81-9,
 Isobutylamine 100-46-9, Benzylamine, uses
 100-47-0, Benzonitrile, uses 107-12-0,
 Propionitrile 108-18-9, Diisopropylamine

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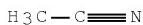
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110-59-8, Valeronitrile 111-26-2, n-Hexylamine 121-44-8, Triethylamine, uses 141-43-5, Ethanolamine, uses 626-23-3, Di-sec-butylamine

RL: TEM (Technical or engineered material use); USES (Uses)
(solvent for preparation of silver or silver alloy nanoparticles on substrate by chemical vapor deposition)

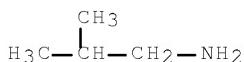
RN 75-05-8 HCAPLUS

CN Acetonitrile (CA INDEX NAME)



RN 78-81-9 HCAPLUS

CN 1-Propanamine, 2-methyl- (CA INDEX NAME)



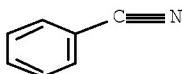
RN 100-46-9 HCAPLUS

CN Benzenemethanamine (CA INDEX NAME)



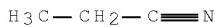
RN 100-47-0 HCAPLUS

CN Benzonitrile (CA INDEX NAME)



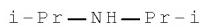
RN 107-12-0 HCAPLUS

CN Propanenitrile (CA INDEX NAME)



RN 108-18-9 HCAPLUS

CN 2-Propanamine, N-(1-methylethyl)- (CA INDEX NAME)



RN 110-59-8 HCAPLUS

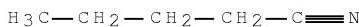
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CN Pentanenitrile (CA INDEX NAME)



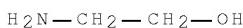
RN 111-26-2 HCAPLUS
CN 1-Hexanamine (CA INDEX NAME)



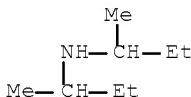
RN 121-44-8 HCAPLUS
CN Ethanamine, N,N-diethyl- (CA INDEX NAME)



RN 141-43-5 HCAPLUS
CN Ethanol, 2-amino- (CA INDEX NAME)



RN 626-23-3 HCAPLUS
CN 2-Butanamine, N-(1-methylpropyl)- (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1231398 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 144:342543
TITLE: New monophosphine coordinated silver carboxylates:
synthesis, characterization and thermal stability
AUTHOR(S): Han, Jian-Lin; Yang, Bao-Hai; Yan, Li-Jun; Shen,
Ying-Zhong; Pan, Yi
CORPORATE SOURCE: State Key Lab of Coordination Chemistry, School of
Chemistry and Chemical Engineering, Nanjing
University, Nanjing, 210093, Peop. Rep. China
SOURCE: Wuji Huaxue Xuebao (2005), 21(11), 1710-1714
CODEN: WHUXEO; ISSN: 1001-4861
PUBLISHER: Wuji Huaxue Xuebao Bianjibu

DOCUMENT TYPE:

Journal

LANGUAGE:

English

OTHER SOURCE(S):

CASREACT 144:342543

AB Diphenyl(2-methoxyphenyl)phosphine-coordinated silver(I) carboxylates [Ag(O₂CR)(L)] (L = diphenyl(2-methoxyphenyl)phosphine, R = CH₃, CH₃CH₂, i-Pr, EtOCH₂, p-CH₃OCH₂H₄, CH₃CH:CH, Me₂C:CH, ClCH₂) were synthesized by reaction of L with the related silver carboxylates in CHCl₃. The complexes were obtained as white solids in high yields and their structures were characterized by elemental anal., ¹H NMR, ¹³C NMR, ³¹P NMR, and IR spectroscopy. The thermal stability of these complexes was studied by TGA. These complexes can be used in the growth of metal thin films via aerosol-assisted CVD (AACVD) techniques (no data).

CC 78-7 (Inorganic Chemicals and Reactions)

ST silver methoxyphenylphosphine carboxylate prepn thermal stability

IT Carboxylic acids, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (complexes, silver; preparation and thermal stability of silver(I)
 methoxyphenyldiphenylphosphine carboxylate complexes)

IT Thermal decomposition

Thermal stability
 (of silver(I) methoxyphenyldiphenylphosphine carboxylate complexes)

IT 563-63-3, Silver acetate 5489-14-5, Silver propionate
 24418-71-1, Silver isobutyrate 55806-37-6, Silver chloroacetate
 61645-93-0, Silver p-anisate 87143-31-5, Silver crotonate
 175841-15-3, Silver ethoxyacetate 208391-39-3, Silver senecioate

RL: RCT (Reactant); RACT (Reactant or reagent)
 (for preparation of silver(I) methoxyphenyldiphenylphosphine carboxylate complex)

IT 53111-20-9, 2-Methoxyphenyldiphenylphosphine

RL: RCT (Reactant); RACT (Reactant or reagent)
 (for preparation of silver(I) methoxyphenyldiphenylphosphine carboxylate complexes)

IT 880132-23-0P 880132-24-1P 880132-25-2P 880132-26-3P 880132-27-4P
 880132-28-5P 880132-29-6P 880132-30-9P

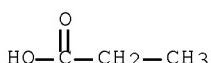
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation and thermal stability of)

IT 5489-14-5, Silver propionate 24418-71-1, Silver
 isobutyrate 87143-31-5, Silver crotonate 208391-39-3,
 Silver senecioate

RL: RCT (Reactant); RACT (Reactant or reagent)
 (for preparation of silver(I) methoxyphenyldiphenylphosphine carboxylate complex)

RN 5489-14-5 HCPLUS

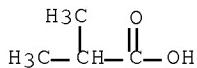
CN Propanoic acid, silver(1+) salt (9CI) (CA INDEX NAME)



● Ag(I)

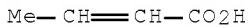
RN 24418-71-1 HCPLUS

CN Propanoic acid, 2-methyl-, silver(1+) salt (1:1) (CA INDEX NAME)



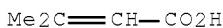
● Ag(I)

RN 87143-31-5 HCPLUS
 CN 2-Butenoic acid, silver(1+) salt (9CI) (CA INDEX NAME)



● Ag(I)

RN 208391-39-3 HCPLUS
 CN 2-Butenoic acid, 3-methyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 4 OF 13 HCPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:800865 HCPLUS Full-text
 DOCUMENT NUMBER: 141:304669
 TITLE: Process for the CVD deposition of a silver film on a substrate
 INVENTOR(S): Decams, Jean Emmanuel; Guillon, Herve; Doppelt, Pascal
 PATENT ASSIGNEE(S): Centre National De La Recherche Scientifique CNRS, Fr.; Qualiflow SA
 SOURCE: Fr. Demande, 15 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2852971	A1	20041001	FR 2003-3613	20030325
FR 2852971	B1	20050603		
WO 2004087988	A1	20041014	WO 2004-FR678	20040319
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,
TD, TG

EP 1606429 A1 20051221 EP 2004-742294 20040319

EP 1606429 B1 20071226

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK

AT 382105 T 20080115 AT 2004-742294 20040319

US 2007148345 A1 20070628 US 2006-550459 20061212

PRIORITY APPLN. INFO.: FR 2003-3613 A 20030325
WO 2004-FR678 W 20040319

OTHER SOURCE(S): MARPAT 141:304669

AB The invention relates to Ag thin film deposition on various substrates, in particular on superconductor substrates. The process consists in carrying out a Ag deposition by CVD on a substrate using a solution of Ag precursor. The Ag precursor is carboxylate of RCO₂Ag in which R is a linear or branched alkyl radical having from 3 to 7 atoms of carbon, used in the form of a solution in a organic liquid. The concentration of precursor of the solution is between 0.01 and 0.6 M. The organic liquid comprises an amine and/or a nitrile, and possibly a solvent whose temperature of evaporation is lower than the temperature of decomposition of the precursor. The percentage in volume of the amine and/or nitrile in the organic liquid is higher than 0.1%.

IC ICM C23C016-448

ICS C23C016-16

CC 75-1 (Crystallography and Liquid Crystals)

Section cross-reference(s): 76

ST CVD silver film carboxylate precursor
amine nitrile org soln

IT Vapor deposition process

(chemical; process for CVD deposition of
silver film on substrate)

IT Carboxylic acids, processes

RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); PROC (Process)

(esters, silver; process for CVD deposition
of silver film on substrate)

IT Films

Ultrathin films

(process for CVD deposition of silver film
on substrate)

IT Amines, processes

Nitriles, processes

RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); PROC (Process)

(process for CVD deposition of silver film
on substrate)

IT Carboxylic acids, processes

RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); PROC (Process)

(salts, silver; process for CVD deposition
of silver film on substrate)

IT Superconductors

(substrate; process for CVD deposition of silver
film on substrate)

IT 108-18-9, Diisopropylamine 108-67-8, Mesitylene,

processes 111-26-2, Hexylamine 7324-58-5,

Silver pivalate

RL: CPS (Chemical process); PEP (Physical, engineering or chemical

process); PROC (Process)
(process for CVD deposition of silver film
on substrate)

IT 7440-22-4P, Silver, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(process for CVD deposition of silver film
on substrate)

IT 1309-48-4, Magnesia, processes 7440-21-3, Silicon, processes
12003-65-5, Aluminum lanthanum oxide(allao3)
RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); PROC (Process)
(substrate; process for CVD deposition of silver
film on substrate)

IT 108-18-9, Diisopropylamine 111-26-2,
Hexylamine 7324-58-5, Silver pivalate
RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); PROC (Process)
(process for CVD deposition of silver film
on substrate)

RN 108-18-9 HCAPLUS

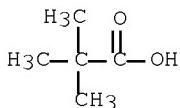
CN 2-Propanamine, N-(1-methylethyl)- (CA INDEX NAME)

i-Pr-NH-Pr-i

RN 111-26-2 HCAPLUS
CN 1-Hexanamine (CA INDEX NAME)

H₂N—(CH₂)₅—Me

RN 7324-58-5 HCAPLUS
CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:358492 HCAPLUS Full-text
DOCUMENT NUMBER: 142:67907
TITLE: Structural characteristics of perfluorinated
carboxylates of Ag(I) with tertiary phosphines and
their application in CVD of metallic layers

AUTHOR(S): Szlyk, E.; Szymanska, I.; Piszczeck, P.; Golinski, A.; Chaberski, M.
CORPORATE SOURCE: Faculty of Chemistry, Nicolaus Copernicus University, Torun, 87-100, Pol.
SOURCE: Monograph Series of the International Conferences on Coordination Chemistry held periodically at Smolenice in Slovakia (2003), 6(Progress in Coordination and Bioinorganic Chemistry), 343-348
CODEN: MSICF5; ISSN: 1335-308X
PUBLISHER: Slovak Technical University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 142:67907

AB New Ag(I) complexes with aliphatic perfluorinated carboxylates [R'COOMPR3], where R' = CF3, C2F5, C3F7, C4F9, C7F15 and tertiary phosphines P(OR)3, PR3; R = Me, Et and diphosphines (Ph2P(CH2)1-2PPh2 = dppm, dppe) were obtained and their spectroscopic 13C, 19F, 31P NMR, IR, MS and thermal properties studied. NMR and IR are in favor of the bridging carboxylates and monodentately bonded P(OR)3, PR3, whereas bridging dppm and chelating dppe suggest the polymeric structure. Thermal decomposition is a multistage process, which in N and air yields metallic Ag. Temperature of Ag formation depends on the type of phosphine and length of perfluorinated chain. Chemical Vapor Deposition in hot wall reactor yields Ag nanometric layers from the obtained Ag(I) complexes, which can be treated as a new class of Ag precursors. The morphol. and composition of the nanolayers were characterized with XRD, XPS, SEM, STEM and relations between thickness of the metallic layer and type of precursor are discussed.

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

ST silver perfluorinated carboxylate phosphine prepn potential CVD precursor

IT Perfluoro compounds

RL: SPN (Synthetic preparation); PREP (Preparation)
(carboxylic acids, silver complexes; preparation of Ag(I) perfluorinated carboxylate complexes with tertiary phosphines and their potential application in CVD of metallic layers)

IT Vapor deposition process

(chemical; preparation of Ag(I) perfluorinated carboxylate complexes with tertiary phosphines and their potential application in CVD of metallic layers)

IT Carboxylic acids, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)
(perfluoro, silver complexes; preparation of Ag(I) perfluorinated carboxylate complexes with tertiary phosphines and their potential application in CVD of metallic layers)

IT 198564-30-6P 207843-83-2P 496968-64-0P 496968-65-1P 496968-66-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and thermal decomposition of Ag(I) perfluorinated carboxylate complexes with tertiary phosphines and their potential application in CVD of metallic layers)

IT 496968-63-9P 496968-67-3P 810662-11-4P 810662-12-5P 810662-13-6P

810662-14-7P 810662-15-8P 810662-16-9P 810662-17-0P 810662-18-1P

810662-19-2P 810662-20-5P 810662-21-6P 810662-22-7P 810662-23-8P

810662-24-9P 810662-25-0P 810662-26-1P 810662-27-2P 810662-28-3P

810662-29-4P 810662-30-7P 810662-31-8P 810662-32-9P 810662-33-0P

810662-34-1P 810662-35-2P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of Ag(I) perfluorinated carboxylate complexes with tertiary phosphines and their potential application in CVD of metallic

layers)

IT 121-45-9, Trimethyl phosphite 122-52-1, Triethyl phosphite 554-70-1,
Triethylphosphine 594-09-2, Trimethylphosphine 1663-45-2,
1,2-Bis(diphenylphosphino)ethane 2071-20-7,
Bis(diphenylphosphino)methane 38845-51-1 55939-48-5 496968-68-4
496968-69-5 496968-70-8 810662-36-3 810662-37-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant for preparation of Ag(I) perfluorinated carboxylate complexes
with

tertiary phosphines)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:691984 HCAPLUS Full-text

DOCUMENT NUMBER: 139:314690

TITLE: Silver thin films deposited by
injection MOCVD

AUTHOR(S): Abourida, M.; Guillon, H.; Jimenez, C.; Decams, J. M.;
Weiss, F.; Valet, O.; Doppelt, P.

CORPORATE SOURCE: ESPCI, Centre d'Etudes de Chimie Metallurgique
(CNRS-UPR 2801), CVD Group, Paris, 75231/05, Fr.

SOURCE: Proceedings - Electrochemical Society (2003),
2003-8(Chemical Vapor Deposition XVI and EUROCVD 14,
Volume 2), 938-945

CODEN: PESODO; ISSN: 0161-6374

PUBLISHER: Electrochemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We have investigated the Ag metalization by MOCVD using a mesitylene solution
of a Ag carboxylate precursor. Ag films were grown on different substrates
such as SiO₂/Si, MgO, and glass, by a Jipelec inject liquid delivery and
vaporization system. N₂ carrier gas and O₂ or H₂ reagent gas were used at a
reactor pressure of 5-15 Torr with deposition temps. of 225-400°. Different
characterization methods were carried out on the obtained Ag films. The XRD
patterns indicated the existence of polycryst. of highly textured metallic Ag.
We found significant dependence of the surface morphol. on the deposition
conditions. Overall, a comprehensive study of the dependence of Ag film
thickness, microstructure and crystallog. orientation on the main process
parameters was elucidated.

CC 75-1 (Crystallography and Liquid Crystals)

Section cross-reference(s): 56, 76

ST silver film MOCVD texture surface structure cond

IT Glass substrates

Surface structure

Texture (metallographic)

(Ag thin films deposited by injection MOCVD and
characterized via texture and surface structure)

IT Electric conductivity

Thickness

(Ag thin films deposited by injection MOCVD and
characterized via thickness and conductivity)

IT Vapor deposition process

(metalorg.; Ag thin films deposited by injection
MOCVD and characterized via texture and surface structure)

IT 7440-22-4, Silver, properties

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process)

(Ag thin films deposited by injection MOCVD and
characterized via texture and surface structure)

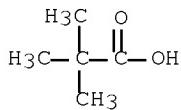
IT 7324-58-5, Silver pivalate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (precursor; Ag thin films deposited by injection
 MOCVD and characterized via texture and surface structure)

IT 7440-21-3, Silicon, uses 7631-86-9, Silica, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (substrate; Ag thin films deposited by injection
 MOCVD and characterized via texture and surface structure)

IT 7324-58-5, Silver pivalate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (precursor; Ag thin films deposited by injection
 MOCVD and characterized via texture and surface structure)

RN 7324-58-5 HCPLUS

CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 7 OF 13 HCPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2003:295307 HCPLUS Full-text
 DOCUMENT NUMBER: 138:279699
 TITLE: Method for surface deposition of transition metal films
 INVENTOR(S): Sharma, Sunity; Narang, Subhash; Bhasin, Kuldip;
 Sharma, Madan Lal
 PATENT ASSIGNEE(S): Sri International, USA
 SOURCE: U.S., 9 pp., Cont.-in-part of U.S. Ser. No. 42,182.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

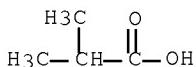
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6548122	B1	20030415	US 1999-444031	19991119
US 5980998	A	19991109	US 1998-42182	19980312
PRIORITY APPLN. INFO.:			US 1997-60711P	P 19970916
			US 1998-42182	A2 19980312
			US 1999-412047	B2 19991004

AB The invention relates to a method for surface deposition of transition metal films. A metal precursor is formed in a process that includes steps of (i) depositing a metal precursor on a substrate; (ii) adding energy to reduce the metal precursor and to precipitate metal on the substrate as a continuous metal layer; and (iii) selecting the metal precursor and the energy such that the purity of the continuous metal layer is greater than 85% and the deposited layer has a similar elec. conductivity to that of a pure metal.

IC ICM B32B003-00

ICS B32B007-00; B32B015-00
INCL 427559000; 427556000; 427096000; 427552000; 427256000; 427558000;
427597000; 427555000; 430313000; 430315000
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 29, 42, 74
ST surface deposition transition metal film
IT Transition metal complexes
RL: RCT (Reactant); RACT (Reactant or reagent)
(amide complexes, deposition precursor; method for surface deposition of transition metal films)
IT Transition metal complexes
RL: RCT (Reactant); RACT (Reactant or reagent)
(amine, deposition precursor; method for surface deposition of transition metal films)
IT Coordination compounds
Salts, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(deposition precursor; method for surface deposition of transition metal films)
IT Films
(elec. conductive; method for surface deposition of transition metal films)
IT Electric conductors
(films; method for surface deposition of transition metal films)
IT Microwave
(irradiation, precursor treated by; method for surface deposition of transition metal films)
IT Electric apparatus
Electric circuits
(method for surface deposition of transition metal films)
IT Metals, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(method for surface deposition of transition metal films)
IT Lithography
(offset, precursor applied by; method for surface deposition of transition metal films)
IT Transition metal complexes
RL: RCT (Reactant); RACT (Reactant or reagent)
(phosphine, deposition precursor; method for surface deposition of transition metal films)
IT Gravure printing
Printing (impact)
Screen printing
(precursor applied by; method for surface deposition of transition metal films)
IT IR radiation
(precursor treated by; method for surface deposition of transition metal films)
IT Coating process
(spray, precursor applied by; method for surface deposition of transition metal films)
IT Transition metal complexes
RL: RCT (Reactant); RACT (Reactant or reagent)
(sulfide complexes, deposition precursor; method for surface deposition of transition metal films)
IT Amides, reactions
Amines, reactions

- Esters, reactions
 Phosphines
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transition metal complexes, deposition precursor; method for surface deposition of transition metal films)
- IT 108-99-6, β -Picoline 5893-61-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (copper precursor prepared from; method for surface deposition of transition metal films)
- IT 79-31-2, Isobutyric acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (gold and silver precursors prepared from; method for surface deposition of transition metal films)
- IT 64-19-7, Glacial acetic acid, reactions 110-86-1, Pyridine, reactions 546-93-0, Magnesium carbonate 13453-07-1, Gold trichloride 54182-83-1, Gold hydroxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (gold precursor prepared from; method for surface deposition of transition metal films)
- IT 7440-50-8P, Copper, uses
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (method for surface deposition of transition metal films)
- IT 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7440-33-7, Tungsten, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-57-5, Gold, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (method for surface deposition of transition metal films)
- IT 20667-12-3, Silver oxide 24418-71-1, Silver isobutyrate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (silver precursor prepared from; method for surface deposition of transition metal films)
- IT 24418-71-1, Silver isobutyrate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (silver precursor prepared from; method for surface deposition of transition metal films)
- RN 24418-71-1 HCPLUS
- CN Propanoic acid, 2-methyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 8 OF 13 HCPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2003:132151 HCPLUS Full-text
 DOCUMENT NUMBER: 139:94177
 TITLE: Aerosol-assisted chemical vapour deposition of silver films from adducts of functionalised silver carboxylates

AUTHOR(S): Edwards, Dennis A.; Mahon, Mary F.; Molloy, Kieran C.;
Ogrodnik, Virginie
CORPORATE SOURCE: Department of Chemistry, University of Bath, Bath, BA2
7AY, UK
SOURCE: Journal of Materials Chemistry (2003), 13(3), 563-570
CODEN: JMACEP; ISSN: 0959-9428
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:94177

AB Ag carboxylates containing unsatd. groups within the ligand were synthesized [AgO₂CR, R = CH₂CN (1), H₂C:CH (3), H₂C:CHCH₂CH₂ (5), Me(H)C:C(Me) (8), Ph(H)C:CH (11)], along with their PPh₃ [AgO₂CR(PPh₃)₂, R = CH₂CN (2), H₂C:CH (4), H₂C:CHCH₂CH₂ (6), Me(H)C:C(Me) (9), Ph(H)C:CH (12)] and 1,2-bis(phenylthio)ethane adducts [AgO₂CR(PhSCH₂CH₂SPh)₂, R = H₂C:CHCH₂CH₂ (7), Me(H)C:C(Me) (10)]. The structures of 2, 6, 8 and 9 were determined by single crystal x-ray diffraction; the adducts are all four-coordinate at Ag with a chelating carboxylate, while 8 adopts a polymeric structure based on dimeric units and in which an approx. octahedral geometry at Ag is attained by addnl. weak intermol. Ag···O and π-Ag···C:C interactions. Ag films were grown by aerosol-assisted CVD using 6, 7, 9 and 10; no film was obtained with 2, while only a very thin film was generated by 12. Films grown from the S-containing adducts 7 and 10 were rough and poorly reflective, while films from 6 and 9 were of superior quality, being smooth and highly reflective.

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

ST crystal structure silver unsatd carboxylate triphenylphosphine; silver unsatd carboxylate triphenylphosphine bisphenylthioethane prepn; film silver unsatd carboxylate precursor; aerosol assisted CVD silver film

IT Films

(aerosol-assisted CVD of silver films from complexes with unsatd. carboxylates with and without triphenylphosphine or bis(phenylthio)ethane)

IT Crystal structure

Molecular structure

(of silver complexes of unsatd. carboxylates with and without triphenylphosphine)

IT Carboxylic acids, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)
(unsatd., silver complexes with/without triphenylphosphine or bis(phenylthio)ethane; preparation as CVD precursors)

IT 79-10-7, Acrylic acid, reactions 80-59-1, trans-2,3-Dimethylacrylic acid 140-10-3, trans-Cinnamic acid, reactions 591-80-0, 4-Pentenoic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(for preparation of silver complexes of unsatd. carboxylate with and without

triphenylphosphine or bis(phenylthio)ethane as CVD precursors)

IT 5651-26-3P 71367-31-2P 488085-36-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(for preparation of silver complexes of unsatd. carboxylate with and without

triphenylphosphine or bis(phenylthio)ethane as CVD precursors)

IT 185038-37-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(for preparation of silver complexes of unsatd. carboxylate with/without triphenylphosphine or bis(phenylthio)ethane as film precursors)

IT 622-20-8, 1,2-Bis(phenylthio)ethane
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (for preparation of silver complexes of unsatd. carboxylates with
 bis(phenylthio)ethane as film precursors)

IT 553628-40-3P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (polymeric; preparation, crystal structure and reaction for preparation of
 silver
 complexes of unsatd. carboxylate with/without triphenylphosphine or
 bis(phenylthio)ethane as film precursors)

IT 553628-37-8P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (preparation and crystal structure and thermal decomposition as precursor
 for
 attempted silver film CVD)

IT 553628-39-0P 553628-41-4P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (preparation and crystal structure and thermal decomposition as precursor
 for
 silver film CVD)

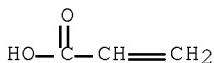
IT 80-59-1DP, trans-2,3-Dimethylacrylic acid, silver bis(phenylthio)ethane
 complex 591-80-0DP, 4-Pentenoic acid, silver bis(phenylthio)ethane
 complex 622-20-8DP, 1,2-Bis(phenylthio)ethane, silver dimethylacrylic and
 penteneoic acid complexes 7440-22-4DP, Silver, dimethylacrylic and
 penteneoic acid bis(phenylthio)ethane complexes 553628-42-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and thermal decomposition as precursor for silver film CVD
)

IT 553628-38-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and thermal decomposition of)

IT 5651-26-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (for preparation of silver complexes of unsatd. carboxylate with and
 without
 triphenylphosphine or bis(phenylthio)ethane as CVD
 precursors)

RN 5651-26-3 HCPLUS

CN 2-Propenoic acid, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

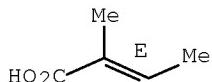
IT 553628-40-3P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (polymeric; preparation, crystal structure and reaction for preparation of
 silver

complexes of unsatd. carboxylate with/without triphenylphosphine or bis(phenylthio)ethane as film precursors)

RN 553628-40-3 HCAPLUS

CN 2-Butenoic acid, 2-methyl-, silver(1+) salt (1:1), (2E)- (CA INDEX NAME)

Double bond geometry as shown.



● Ag(I)

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:267015 HCAPLUS Full-text

DOCUMENT NUMBER: 137:39501

TITLE: Low-temperature MOCVD of conducting, micrometer-thick, silver films

AUTHOR(S): Samoilenkov, Sergej; Stefan, Madalina; Wahl, Georg;

Paramonov, Sergej; Kuzmina, Natalia; Kaul, Andrey

CORPORATE SOURCE: TU Braunschweig, IOPW, Braunschweig, D-38108, Germany

SOURCE: Chemical Vapor Deposition (2002), 8(2), 74-78

Published in: Adv. Mater. (Weinheim, Ger.), 14(5)

CODEN: CVDEFX; ISSN: 0948-1907

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ag layers up to 3 μm thick were deposited at 250–510° using a simple powder flash evaporation MOCVD procedure with a Ag pivalate as the volatile precursor. C-free deposits could be obtained at temps. ≥ 310°. A very high deposition rate of 10 μm h⁻¹ was achieved. The Ag layers were dense and conducting. Properties of Ag pivalate, and the influence of deposition temperature on film microstructure, are discussed. The procedure is a cheap and robust route to Ag coatings.

CC 75-1 (Crystallography and Liquid Crystals)

Section cross-reference(s): 76

ST silver conducting film metalorg CVD microstructure

IT Microstructure

(from low-temperature MOCVD of conducting, micrometer-thick, silver films using silver pivalate precursor)

IT Electric conductors

(low-temperature MOCVD of conducting, micrometer-thick, silver films using silver pivalate precursor)

IT Vapor deposition process

(metalorg.; low-temperature MOCVD of conducting, micrometer-thick, silver films using silver pivalate precursor and characterization)

IT 7324-58-5, Silver pivalate

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)

(low-temperature MOCVD of conducting, micrometer-thick, silver films using silver pivalate precursor)

IT 7440-22-4, Silver, properties

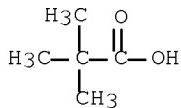
RL: CPS (Chemical process); PEP (Physical, engineering or chemical

process); PRP (Properties); PROC (Process)
 (low-temperature MOCVD of conducting, micrometer-thick, silver films using
 silver pivalate precursor and characterization)

IT 7324-58-5, Silver pivalate
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PROC (Process)
 (low-temperature MOCVD of conducting, micrometer-thick, silver films using
 silver pivalate precursor)

RN 7324-58-5 HCPLUS

CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

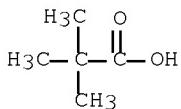
REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 10 OF 13 HCPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2002:44847 HCPLUS Full-text
 DOCUMENT NUMBER: 136:303124
 TITLE: Aerosol-assisted chemical vapour deposition (AACVD) of silver films from triorganophosphine adducts of silver carboxylates, including the structure of [Ag(O₂CC₃F₇)(PPh₃)₂]
 AUTHOR(S): Edwards, Dennis A.; Harker, Robert M.; Mahon, Mary F.; Molloy, Kieran C.
 CORPORATE SOURCE: Department of Chemistry, University of Bath, Bath, BA2 7AY, UK
 SOURCE: Inorganica Chimica Acta (2002), 328, 134-146
 CODEN: ICHAA3; ISSN: 0020-1693
 PUBLISHER: Elsevier Science S.A.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 136:303124
 AB Silver carboxylates [Ag(O₂CR): R = Me, tBu, 2,4,6-Me₃C₆H₂], fluorocarboxylates [Ag(O₂CRf): Rf = C₃F₇, C₆F₁₃, C₇F₁₅] and their phosphine adducts [Ag(O₂CR)·nPR₃': R = Me, tBu, 2,4,6-Me₃C₆H₂, R' = Me, Ph, n = 2; R = Me, R' = Me, n = 3; Ag(O₂CRf)·2PPh₃, Rf = C₃F₇, C₆F₁₃, C₇F₁₅] were synthesized, characterized spectroscopically and used as precursors in the aerosol-assisted CVD of silver films. All the phosphine adducts produced films, though in general PMe₃ adducts, proved more successful than PPh₃ analogs. The fluorocarboxylates and their PPh₃ adducts all generated silver films, though the growth rate for the adducts was lower. All these latter films showed carbon impurities while fluorine was also evident in most cases. The x-ray structure of AgO₂CC₃F₇·2PPh₃ is also reported.
 CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 66, 75, 76
 ST silver carboxylate phosphine complex prepn structure
 precursor CVD film; film silver CVD prepn elec
 resistivity reflectivity; thermal decompn stability silver

- carboxylate phosphine complex; crystal structure silver fluorobutanoate phosphine complex
- IT Transition metal complexes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(carboxylic acid, silver; preparation and thermal decomposition and stability of silver(I) carboxylates and their triorganophosphine complexes, and effectiveness as precursors for aerosol-assisted chemical vapor deposition of silver films)
- IT Vapor deposition process
(chemical; of silver(I) carboxylates and their triorganophosphine complexes as precursors for aerosol-assisted chemical vapor deposition of silver films)
- IT Crystal structure
Molecular structure
(of silver perfluorobutanoato triphenylphosphine complex as precursor for aerosol-assisted chemical vapor deposition of silver films)
- IT Thermal decomposition
Thermal stability
(of silver(I) carboxylates and their triorganophosphine complexes as precursors for aerosol-assisted chemical vapor deposition of silver films)
- IT Optical reflection
Sheet resistance
(preparation and surface properties of silver films prepared by aerosol-assisted chemical vapor deposition of silver(I) carboxylates and their triorganophosphine complexes as precursors)
- IT Films
(reflective; preparation and surface properties of silver films prepared by aerosol-assisted chemical vapor deposition of silver(I) carboxylates and their triorganophosphine complexes as precursors)
- IT Carboxylic acids, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(transition metal complexes, silver; preparation and thermal decomposition and stability of silver(I) carboxylates and their triorganophosphine complexes, and effectiveness as precursors for aerosol-assisted chemical vapor deposition of silver films)
- IT 7440-22-4P, Silver, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and surface properties of silver films prepared by aerosol-assisted chemical vapor deposition of silver(I) carboxylates and their triorganophosphine complexes as precursors)
- IT 408510-62-3P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(preparation, crystal and mol. structure, thermal decomposition and stability,

and effectiveness as precursor for aerosol-assisted chemical vapor deposition of silver films)

- IT 335-93-3P, Silver(I) perfluorooctanoate 424-05-5P, Silver(I) perfluoroheptanoate 3794-64-7P, Silver(I) perfluorobutyrate 55939-48-5P, Silver(I) perfluorobutyrate dimer
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (preparation, reaction with triphenylphosphine, thermal decomposition and stability, and effectiveness as precursor for aerosol-assisted chemical vapor deposition of silver films)
- IT 563-63-3P, Silver(I) acetate 7324-58-5P, Silver(I) pivalate 51750-69-7P, Silver(I) mesitylate
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (preparation, reactions with triorganophosphines, and effectiveness as precursor for aerosol-assisted chemical vapor deposition of silver films)
- IT 66083-49-6P 66083-58-7P 408510-48-5P 408510-50-9P 408510-52-1P
 408510-57-6P 408510-60-1P 408510-64-5P 408510-65-6P
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (preparation, thermal decomposition and stability, and effectiveness as precursor
 for aerosol-assisted chemical vapor deposition
 of silver films)
- IT 75-98-9, Pivalic acid 375-22-4, Perfluorobutyric acid 480-63-7,
 2,4,6-Trimethylbenzoic acid 3825-26-1, Ammonium perfluorooctanoate
 6130-43-4, Ammonium perfluoroheptanoate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant; preparation of silver(I) carboxylates and
 their triorganophosphine complexes as precursors for aerosol-assisted
 chemical vapor deposition of silver
 films)
- IT 7324-58-5P, Silver(I) pivalate
 RL: PEP (Physical, engineering or chemical process); PYP (Physical
 process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 PROC (Process); RACT (Reactant or reagent)
 (preparation, reactions with triorganophosphines, and effectiveness as
 precursor for aerosol-assisted chemical vapor
 deposition of silver films)
- RN 7324-58-5 HCPLUS
- CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 11 OF 13 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:750447 HCPLUS Full-text
DOCUMENT NUMBER: 136:45856
TITLE: MOCVD of Ag thin films
AUTHOR(S): Paramonov, S.; Samoilenkov, S.; Papucha, S.;
Malkerova, I.; Alikhanyan, A.; Kuzmina, N.; Troyanov,
S. I.; Kaul, A. R.
CORPORATE SOURCE: Department of Chemistry, Moscow State University,
Moscow, 119899, Russia
SOURCE: Journal de Physique IV: Proceedings (2001), 11(Pr3,
Thirteenth European Conference on Chemical Vapor
Deposition, 2001), Pr3/645-Pr3/652
CODEN: JPICEI; ISSN: 1155-4339

PUBLISHER: EDP Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The new mixed ligand complex [(Bu₃P)Ag(Me₃CCOO)] (I) is suggested as a precursor for MOCVD of Ag thin films. It was characterized by elemental, TGA and by mass-spectrometry. The gas phase consisted only of monomeric mols. X-ray study shows that the crystal structure (monoclinic, space group C2/c) is built up from dimeric units with van der Waals interactions between them. Ag films were grown on Si and oxide substrates using I and [Ag(Me₃CCOO)] (II) precursors by CVD technique in presence of O. The dependence of the film thickness, orientation and microstructure on the process parameters was determined. The use of I is at least 20 times more effective (regarding the film thickness) in comparison to that of II.

CC 75-1 (Crystallography and Liquid Crystals)

Section cross-reference(s): 78

ST silver film metalorg CVD precursor silver pivalato butylphosphine

IT Vapor deposition process

(metalorg.; of silver films using silver pivalato tributylphosphine complex or silver pivalate)

IT Crystal structure

Molecular structure

(of silver pivalato tributylphosphine complex)

IT 7324-58-5, Silver(1+) pivalate

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)

(metalorg. CVD of silver films using precursor)

IT 380376-07-8P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(preparation and crystal structure and use as precursor in metalorg. CVD of silver films)

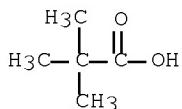
IT 7324-58-5, Silver(1+) pivalate

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)

(metalorg. CVD of silver films using precursor)

RN 7324-58-5 HCPLUS

CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L112 ANSWER 12 OF 13 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:776567 HCPLUS Full-text

DOCUMENT NUMBER: 132:72825

TITLE: Spectroscopic and thermal studies of silver(I) complexes with aliphatic carboxylates and triphenylphosphine

AUTHOR(S): Szlyk, E.; Lakomska, I.; Surdykowski, A.; Golinski, A.

CORPORATE SOURCE: Faculty of Chemistry, Nicholas Copernicus University, Torun, 87-100, Pol.

SOURCE: Polish Journal of Chemistry (1999), 73(11), 1763-1769
CODEN: PJCHDQ; ISSN: 0137-5083

PUBLISHER: Polish Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Silver(I) complexes with triphenylphosphine and aliphatic carboxylates, $[Ag_2(PPh_3)_2(\mu\text{-RCOO})_2]$ ($R = C_2H_5$, i-Pr, Bu, i-Bu, tert-Bu), were prepared and characterized with 1H , ^{13}C , ^{31}P NMR and vibrational spectra. Results of spectral anal. are in favor of Ag(I) trigonal coordination with unidentate bonded triphenylphosphine and bidentate carboxylates, forming bridges between silver(I) ions. Thermal decomposition was studied in 293-973 K range in nitrogen. The multistage decomposition begins with the detachment of carboxylates and is followed by triphenylphosphine dissociation. The final product is metallic silver, formed between 605-683 K.

CC 78-7 (Inorganic Chemicals and Reactions)

ST silver aliph carboxylate phosphine dinuclear prepn thermolysis; thermal decomprn silver aliph carboxylato phosphine dinuclear

IT IR spectra

NMR (nuclear magnetic resonance)

Thermal decomposition

(of silver(I) aliphatic carboxylato triphenylphosphine dinuclear complexes)

IT Transition metal complexes

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(silver aliphatic carboxylic acids; preparation, ^{13}C and ^{31}P NMR and IR spectra, and thermal decomposition of silver(I) aliphatic carboxylato triphenylphosphine dinuclear complexes)

IT 55939-47-4 211387-90-5 253199-65-4 253199-66-5 253199-67-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(for preparation of silver(I) aliphatic carboxylato triphenylphosphine dinuclear complex)

IT 7440-22-4, Silver, formation (nonpreparative)

RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)

(formation from thermal decomposition of silver(I) aliphatic carboxylato triphenylphosphine dinuclear complexes)

IT 253199-61-0P 253199-62-1P 253199-63-2P 253199-64-3P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, ^{13}C and ^{31}P NMR and IR spectra, and thermal decomposition)

IT 253199-60-9P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, ^{13}C and ^{31}P NMR and IR spectra, and thermal decomposition as potential precursor for CVD purposes)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

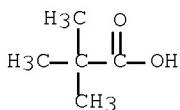
L112 ANSWER 13 OF 13 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:660973 HCPLUS Full-text
DOCUMENT NUMBER: 132:42963
TITLE: Silver pivalate as a new volatile precursor for thin film deposition
AUTHOR(S): Kuzmina, N.; Paramonov, S.; Ivanov, R.; Kezko, V.; Polamo, K.; Troyanov, S.
CORPORATE SOURCE: Department of Chemistry, Moscow State University, Moscow, 119899, Russia
SOURCE: Journal de Physique IV: Proceedings (1999), 9(Pr8, Proceedings of the Twelfth European Conference on Chemical Vapour Deposition, 1999, Vol. 2), 923-928
CODEN: JPICEI; ISSN: 1155-4339
PUBLISHER: EDP Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB For a new volatile Ag(I) precursor, the AgPiv complex (HPiv - 2,2-dimethylpropionic acid) was prepared and characterized by elemental and TGA. Complex AgPiv is moisture stable and has rather low light sensitivity. An x-ray structure determination showed that the crystal structure (triclinic, space group P.hivin.) of AgPiv consists of dimers, connected with each other by bridging Ag-O bonds. There are Ag...Ag contacts within dimers and between polymeric chains. AgPiv can be sublimed under dynamic vacuum (0.01-0.03 torr) at 230-250°. The atomic layer epitaxy expts. on SrS:Ag thin film growth were conducted using AgPiv as volatile precursor.
CC 75-1 (Crystallography and Liquid Crystals)
ST silver pivalate prepn crystal structure precursor film deposition; strontium sulfide silver atomic layer epitaxy silver pivalate precursor
IT Crystal structure
Molecular structure
(of silver pivalate)
IT Atomic layer epitaxy
(of silver-doped SrS using silver pivalate as precursor)
IT 7440-22-4, Silver, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(atomic layer epitaxy of silver-doped SrS using silver pivalate as precursor)
IT 1314-96-1, Strontium sulfide
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(atomic layer epitaxy of silver-doped SrS using silver pivalate as precursor)
IT 7324-58-5P, Silver pivalate
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and crystal structure and properties and precursor for atomic layer epitaxy of silver-doped strontium sulfide)
IT 252350-94-0P

IT 75-98-9DP, Pivalic acid, silver diisopropylamine complex
 108-18-9DP, Diisopropylamine, silver pivalato complex
 7440-22-4DP, Silver, diisopropylamine pivalato complex,
 preparation
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

IT 7324-58-5P, Silver pivalate
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN
 (Synthetic preparation); PREP (Preparation); PROC (Process)
 (preparation and crystal structure and properties and precursor for atomic
 layer epitaxy of silver-doped strontium sulfide)

RN 7324-58-5 HCPLUS

CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)

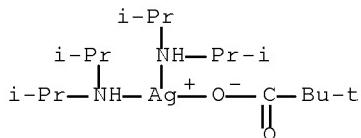


● Ag(I)

IT 252350-94-0P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation and stability of)

RN 252350-94-0 HCPLUS

CN Silver, (2,2-dimethylpropanoato- κ O)bis[N-(1-methylethyl)-2-
 propanamine]- (CA INDEX NAME)



IT 108-18-9DP, Diisopropylamine, silver pivalato complex
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

RN 108-18-9 HCPLUS

CN 2-Propanamine, N-(1-methylethyl)- (CA INDEX NAME)

i-Pr-NH-Pr-i

REFERENCE COUNT:

9

THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> => d que

L53 8 SEA FILE=REGISTRY ABB=ON (108-18-9/BI OR 108-67-8/BI OR
 111-26-2/BI OR 12003-65-5/BI OR 1309-48-4/BI OR 7324-58-5/BI
 OR 7440-21-3/BI OR 7440-22-4/BI)
L58 STR

Ag 1

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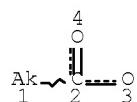
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 1

STEREO ATTRIBUTES: NONE

L60 STR



NODE ATTRIBUTES:

CONNECT IS E1 RC AT 1
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED
 ECOUNT IS M2-X6 C AT 1

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

L62	172 SEA FILE=REGISTRY SSS FUL	L60 AND L58
L63	113 SEA FILE=REGISTRY ABB=ON	L62 NOT 1-20/NR
L64	57 SEA FILE=REGISTRY ABB=ON	L63 AND 1-2/NC
L65	51 SEA FILE=REGISTRY ABB=ON	L64 NOT P/ELS
L66	1 SEA FILE=REGISTRY ABB=ON	L65 AND L53
L67	1 SEA FILE=REGISTRY ABB=ON	HEXYLAMINE/CN
L68	1 SEA FILE=REGISTRY ABB=ON	ISOBUTYLAMINE/CN
L69	1 SEA FILE=REGISTRY ABB=ON	DI-SEC-BUTYLAMINE/CN
L70	1 SEA FILE=REGISTRY ABB=ON	TRIETHYLAMINE/CN
L71	1 SEA FILE=REGISTRY ABB=ON	BENZYLAMINE/CN
L72	1 SEA FILE=REGISTRY ABB=ON	ETHANOLAMINE/CN
L73	1 SEA FILE=REGISTRY ABB=ON	DIISOPROPYLAMINE/CN
L74	8 SEA FILE=REGISTRY ABB=ON	(L66 OR L67 OR L68 OR L69 OR L70 OR L71 OR L72 OR L73)
L75	1 SEA FILE=REGISTRY ABB=ON	ACETONITRILE/CN
L76	1 SEA FILE=REGISTRY ABB=ON	VALERONITRILE/CN
L77	1 SEA FILE=REGISTRY ABB=ON	BENZONITRILE/CN
L78	1 SEA FILE=REGISTRY ABB=ON	PROPIONITRILE/CN
L79	4 SEA FILE=REGISTRY ABB=ON	(L75 OR L76 OR L77 OR L78)
L80	277 SEA FILE=HCAPLUS ABB=ON	L65
L81	80379 SEA FILE=HCAPLUS ABB=ON	L74
L82	52087 SEA FILE=HCAPLUS ABB=ON	L79
L83	8 SEA FILE=HCAPLUS ABB=ON	L80 AND (CVD OR CHEM? (2A)VAPOR?)

L86	6 SEA FILE=HCAPLUS ABB=ON	L83 AND (L81 OR L82)
L87	10 SEA FILE=HCAPLUS ABB=ON	L80 AND FILM?(3A)DEPOSIT?
L88	6 SEA FILE=HCAPLUS ABB=ON	L87 AND (L81 OR L82)
L89	5 SEA FILE=HCAPLUS ABB=ON	(L83 OR L87) AND (?AMINE? OR ?NITRILE?)
L90	5 SEA FILE=HCAPLUS ABB=ON	KUZMINA N?/AU AND PARAMONOV S?/AU
L91	4 SEA FILE=HCAPLUS ABB=ON	L80 AND L90
L93	6 SEA FILE=HCAPLUS ABB=ON	L80 AND (KUZIMA N?/AU OR PARAMONOV S?/AU OR KEZKO V?/AU OR POLAMO K?/AU OR TROYANOV S?/AU)
L94	14 SEA FILE=HCAPLUS ABB=ON	(AG OR SILVER) AND (KUZIMA N?/AU OR PARAMONOV S?/AU OR KEZKO V?/AU OR POLAMO K?/AU OR TROYANOV S?/AU)
L95	14 SEA FILE=HCAPLUS ABB=ON	L91 OR L93 OR L94
L96	11 SEA FILE=HCAPLUS ABB=ON	L83 OR L86 OR L88 OR L89
L101	13 SEA FILE=HCAPLUS ABB=ON	(SILVER OR AG) (3A)?CARBOXYLAT? AND FILM?(3A)DEPOSIT?
L102	17 SEA FILE=HCAPLUS ABB=ON	(SILVER OR AG) (3A)?CARBOXYLAT? AND (CVD OR CHEM?(3A)VAPOR?)
L103	1 SEA FILE=HCAPLUS ABB=ON	(L101 OR L102) AND (?AMINE? OR ?NITRILE?)
L104	2279 SEA FILE=HCAPLUS ABB=ON	"CARBOXYLIC ACIDS, PROCESSES"+NT, PFT/C T
L105	13 SEA FILE=HCAPLUS ABB=ON	L104(L)SILVER
L106	1 SEA FILE=HCAPLUS ABB=ON	L105 AND FILM?(3A)DEPOSIT?
L107	1 SEA FILE=HCAPLUS ABB=ON	L105 AND (CVD OR CHEM?(3A)VAPOR?)
L108	16 SEA FILE=HCAPLUS ABB=ON	(SILVER OR AG) (3A)?CARBOXYLIC? AND FILM?(3A)DEPOSIT?
L109	6 SEA FILE=HCAPLUS ABB=ON	(SILVER OR AG) (3A)?CARBOXYLIC? AND (CVD OR CHEM?(3A)VAPOR?)
L110	13 SEA FILE=HCAPLUS ABB=ON	L96 OR L103 OR L106 OR L107 OR L109
L111	3 SEA FILE=HCAPLUS ABB=ON	(L101 OR L102 OR L108 OR L109) AND (L81 OR L82)
L112	13 SEA FILE=HCAPLUS ABB=ON	L110 OR L111
L113	11 SEA FILE=HCAPLUS ABB=ON	L95 NOT L112

=> d l113 ibib abs ind hitstr 1-11

L113 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2007:1261330 HCAPLUS Full-text
 DOCUMENT NUMBER: 148:121310
 TITLE: Synthesis, structure, and theoretical study of lower trifluoromethyl derivatives of [60] fullerene
 Dorozhkin, Evgenii I.; Goryunkov, Alexey A.; Ioffe, Ilya N.; Avdoshenko, Stanislav M.; Markov, Vitaliy Yu.; Tamm, Nadezhda B.; Ignat'eva, Daria V.; Sidorov, Lev N.; Troyanov, Sergey I.
 AUTHOR(S):
 CORPORATE SOURCE: Chem. Dep., Moscow State Univ., Moscowim, 119992, Russia
 SOURCE: European Journal of Organic Chemistry (2007), (30), 5082-5094
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A number of C₆₀(CF₃)_n compds. with n = 2-10 were synthesized by the reaction of C₆₀ with silver trifluoroacetate and successfully isolated by HPLC. This resulted in the first crystal structure determination of six lower trifluoro-Me derivs. with n = 2 (single isomer), 4 (two isomers), and 6 (three isomers). A kinetic model of sequential trifluoromethylation based on the Bell-Evans-

Polanyi principle was used to explain the exptl. observed isomeric distribution in the mixts. of C₆₀(CF₃)_n compds. up to n = 6.

CC 22-8 (Physical Organic Chemistry)
Section cross-reference(s): 75

ST prepn structure theor trifluoromethyl deriv fullerene; HPLC trifluoromethyl deriv fullerene; liq chromatog trifluoromethyl deriv fullerene

IT Density functional theory
(PBE; preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT Molecular structure
(crystallog. and optimized; preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT Sublimation
(fractional; preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT AM1 (molecular orbital method)

Crystal structure

Evans-Polanyi equation

HPLC

Isomers

Laser desorption mass spectrometry

Regiochemistry

UV and visible spectra
(preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT Fullerenes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT Radicals, reactions
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)
(trifluoromethyl mechanistic reaction intermediate; preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT Halomethylation

Reaction enthalpy
(trifluoromethylation; preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT 651730-18-6 651730-19-7 915089-72-4 1000417-39-9 1000417-40-2
1000417-41-3 1000417-42-4 1000417-43-5
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(crystallog.; preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT 2264-21-3, Trifluoromethyl 651730-16-4 651730-18-6 1000417-45-7
1000417-49-1
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)
(mechanistic reaction intermediate; preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT 165273-86-9 651730-20-0 757216-87-8 757216-91-4 757216-92-5
913375-86-7 1000417-46-8 1000417-47-9 1000417-48-0 1000417-50-4
1000417-51-5 1000417-52-6 1000417-53-7 1000417-54-8 1000417-55-9
1000417-56-0 1000417-57-1 1000417-58-2 1000417-59-3 1000417-60-6

1000417-62-8

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)

(preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT 757216-88-9P 928757-42-0P 1000417-44-6P

RL: FMU (Formation, unclassified); PRP (Properties); PUR (Purification or recovery); FORM (Formation, nonpreparative); PREP (Preparation)

(preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT 2966-50-9, Silver trifluoroacetate 131159-39-2, Fullerene

RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT 2314-97-8, Trifluoromethyl iodide

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

IT 557787-61-8, Cosmosil Bucky Prep

RL: TEM (Technical or engineered material use); USES (Uses)

(preparation, structure, and theor. study of lower trifluoromethyl derivs. of [60] fullerene)

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L113 ANSWER 2 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:1164432 HCPLUS Full-text

DOCUMENT NUMBER: 148:68225

TITLE: 5-Nitroaminotetrazole as a building block for extended network structures: Syntheses and crystal structures of a number of heavy metal derivatives

AUTHOR(S): Semenov, Sergey N.; Rogachev, Andrey Yu.; Eliseeva, Svetlana V.; Belousov, Yury A.; Drozdov, Andrey A.; Troyanov, Sergey I.

CORPORATE SOURCE: Department of Chemistry, Moscow State University, Moscow, 119899, Russia

SOURCE: Polyhedron (2007), 26(17), 4899-4907

CODEN: PLYHDE; ISSN: 0277-5387

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The lead, Hg, Cu and Ag derivs. of 5-nitroaminotetrazole (5-H₂NATZ) were obtained by the reaction between the metal nitrate and K 5-nitroaminotetrazolate. The lead and Hg complexes were crystallized and characterized by single crystal x-ray diffraction. The lead complex has a polymeric structure formed by (PbO₂)_n chains and anions of 5-NATZ, where each Pb atom is surrounded by ten O atoms. The Hg salt is constructed from neutral (Hg-NATZ)_n chains, where the Hg atom has a linear coordination. The influence of chemical hardness and charge distribution on the reactivity and coordination properties of 5-NATZ was estimated based on d. functional calcns. The thermal stability of the salts was also studied.

CC 78-5 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 65, 75

ST crystal structure mercury lead nitroaminotetrazolate; nitroaminotetrazolate alkali transition metal prepn; nitroaminotetrazole complexation heavy transition metal DFT calcn

IT Crystal structure
Molecular structure
(of mercury(II) and lead(II) 5-(nitroamino)tetrazolates)

IT Thermal stability
(of potassium and heavy metal 5-(nitroamino)tetrazolates)

IT 122983-12-4 220013-82-1
RL: PRP (Properties)
(DFT calcns. equilibrium geometry, charge distribution and chemical hardness)

IT 959843-16-4P 959843-19-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(coordination polymer; preparation, crystal structure, and thermal stability)

IT 18588-16-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and DFT calcns. equilibrium geometry, charge distribution and chemical hardness)

IT 18264-75-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of heavy metal 5-(nitroamino)tetrazolates)

IT 122774-15-6P 168061-73-2P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of heavy metal 5-(nitroamino)tetrazolates and thermal stability)

IT 959843-17-5P 959843-18-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of heavy metal 5-(nitroamino)tetrazolates and thermal stability)

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L113 ANSWER 3 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1134756 HCPLUS Full-text
DOCUMENT NUMBER: 146:205977
TITLE: Structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends
AUTHOR(S): Dorozhkin, Eugenii I.; Ignat'eva, Daria V.; Tamm, Nadezhda B.; Vasiliuk, Natalia V.; Goryunkov, Alexey A.; Avdoshenko, Stanislav M.; Ioffe, Ilya N.; Sidorov, Lev N.; Pattison, Philip; Kemnitz, Erhard; Troyanov, Sergey I.
CORPORATE SOURCE: Chemistry Department, Moscow State University, Moscow, 119992, Russia
SOURCE: Journal of Fluorine Chemistry (2006), 127(10), 1344-1348
CODEN: JFLCAR; ISSN: 0022-1139
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 146:205977
AB A novel isomer of C₇₀(CF₃)₆ has been isolated by HPLC from a mixture prepared by trifluoromethylation of C₇₀ with CF₃COOAg. The X-ray structure revealed an unprecedented arrangement of CF₃ groups forming a p3mp ribbon. This result provides addnl. evidence of the preferable formation of trifluoromethylated fullerene mols. comprising a single continuous ribbon of edge-sharing para- and meta-C₆(CF₃)₂ hexagons.
CC 22-13 (Physical Organic Chemistry)
Section cross-reference(s): 75, 78
ST structure trifluoromethylated fullerene
IT UV absorption
(UV-visible; structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique

arrangement of addends)
IT Formation enthalpy
(calculated; structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT Valence
(free valence index; structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT Laser ionization mass spectrometry
(photodesorption, matrix-assisted; structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT Laser desorption mass spectrometry
(photoionization, matrix-assisted; structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT Crystal structure
(structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT Fullerenes
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT Halomethylation
(trifluoromethylation; structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT 897926-31-7 897926-33-9 897926-34-0 897926-47-5 897926-48-6
897926-49-7 897926-50-0 897926-52-2 897926-66-8 897926-68-0
897926-69-1 897926-70-4 897926-72-6 897926-85-1 897928-52-8
897928-68-6 922506-82-9 922506-84-1 922506-85-2 922506-87-4
922506-88-5 922506-89-6 922506-91-0 922506-92-1 922506-93-2
922506-95-4 922506-97-6 922506-99-8 922507-00-4 922507-02-6
922507-05-9 922507-10-6 922507-13-9 922507-17-3 922507-21-9
922507-24-2 922507-28-6 922507-30-0 922507-32-2 922507-35-5
922507-38-8 922507-40-2 922507-43-5 922507-45-7 922507-47-9
922507-48-0 922507-50-4 922507-52-6 922507-54-8 922507-59-3
922507-61-7 922507-71-9
RL: PRP (Properties)
(calculated; structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT 922516-98-1P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystallog.; structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT 115383-22-7, Fullerene-C₇₀
RL: RCT (Reactant); RACT (Reactant or reagent)
(structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT 2966-50-9, Silver mono(trifluoroacetate)
RL: RGT (Reagent); RACT (Reactant or reagent)
(structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)
IT 897926-44-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(structure of 1,4,10,19,25,41-C₇₀(CF₃)₆, isomer with unique arrangement of addends)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TITLE: Crystal Structure and Thermal Stability of Ag₃(CHF₂COO)₃(H₂O)₂

AUTHOR(S): Boltalin, A. I.; Kas'yanov, S. A.; Karpova, E. V.; Troyanov, S. I.

CORPORATE SOURCE: Moscow State University, Moscow, 119899, Russia

SOURCE: Russian Journal of Coordination Chemistry (Translation of Koordinatsionnaya Khimiya) (2004), 30(10), 692-697

CODEN: RJCCEY; ISSN: 1070-3284

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB X-ray diffraction anal. of [Ag₃(CHF₂COO)₃(H₂O)₂] revealed that its crystals are orthorhombic: space group Cmca, a 13.809(4), b 15.975(2), c 12.244(2) Å, Z = 8. The TGA showed that under the atmospheric of N₂ and at 101.3 kPa, Ag difluoroacetate melts at 488 K; the thermal decomposition reaction occurs in the interval 493-548 K with the formation of Ag. Under the mass-spectral experiment conditions at 521 K, two processes occur simultaneously, namely, evaporation and decomposition. The following ions were detected in the mass-spectrum of Ag difluoroacetate: Ag₂L⁺, Ag₂R⁺, Ag₂F⁺, Ag₂₀⁺, Ag₂⁺, Ag⁺, LH⁺, RCO⁺, R⁺ (L = CHF₂COO, R = CHF₂).

CC 78-5 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 73, 75

ST silver fluoroacetate hydrate prepn structure thermal decompn mass spectrum; crystal structure silver fluoroacetate hydrate

IT Crystal structure

Mass spectra

Molecular structure

Thermal decomposition
(of silver(I) difluoroacetate hydrate)

IT 381-73-7, Difluoroacetic acid

RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of silver(I) difluoroacetate hydrate)

IT 845880-52-6P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, crystal structure, and mass spectrum of thermal decomposition products)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L113 ANSWER 5 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:363637 HCPLUS Full-text

DOCUMENT NUMBER: 141:342364

TITLE: Synthesis and crystal structure of copper(II) nitrato complexes NO[Cu(NO₃)₃], Na₂[Cu(NO₃)₄], and Ag₂[Cu(NO₃)₄]

AUTHOR(S): Znamenkov, K. O.; Morozov, I. V.; Troyanov, S. I.

CORPORATE SOURCE: Mosk. Gos. Univ. im. M. V. Lomonosova, Moscow, Russia

SOURCE: Zhurnal Neorganicheskoi Khimii (2004), 49(2), 213-220

CODEN: ZNOKAQ; ISSN: 0044-457X

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB NO[Cu(NO₃)₃], Na₂[Cu(NO₃)₄], and Ag₂[Cu(NO₃)₄] were prepared from HNO₃ solns. containing Cu(NO₃)₂ or a mixture of Cu(NO₃)₂ and MnO₃ (M = Na, Ag). NO[Cu(NO₃)₃] is monoclinic, space group P21/m, Z = 2, R1 = 0.0204. Na₂[Cu(NO₃)₄] is monoclinic, space group P21/c, Z = 2, R1 = 0.0250. Ag₂[Cu(NO₃)₄] is triclinic, space group P.hivin.1, Z = 2, R1 = 0.0282.

NO[Cu(NO₃)₃] contains an infinite layer of [Cu(NO₃)₃]_{nn-}. [Cu(NO₃)₄] in the other 2 complexes is square planar.

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75

ST copper nitrate complex nitrosyl sodium silver prepⁿ structure;
crystal structure copper nitrate complex nitrosyl sodium silver

IT Crystal structure
Molecular structure
(of copper nitrate complexes with nitrosyl and sodium and
silver)

IT 79829-38-2P 770736-39-5P 770736-40-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)

IT 7697-37-2, Nitric acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for preparation of nitrosyl trinitratocuprate)

L113 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:140799 HCAPLUS Full-text

DOCUMENT NUMBER: 139:62034

TITLE: Synthesis and crystal structure of silver(I)
carboxylate complexes, Ag(PnBu₃)₂[C(CH₃)₃COO]
and Ag(Phen)₂[CF₃COO]·H₂O

AUTHOR(S): Paramonov, S. E.; Kuzmina, N. P.;
Troyanov, S. I.

CORPORATE SOURCE: Department of Chemistry, Laboratory of Coordination
Chemistry, Moscow State University, Moscow, 119899,
Russia

SOURCE: Polyhedron (2003), 22(6), 837-841
CODEN: PLYHDE; ISSN: 0277-5387

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:62034

AB Ag(PBu₃)₂[CMe₃COO] (I) and Ag(Phen)₂[CF₃COO]·H₂O (II) were synthesized by the reaction of silver(I) carboxylate with the neutral ligand in absolute ether and ethanol, resp. Crystal structures of I and II were determined by single crystal x-ray diffraction. The crystal structure of I is built up from dimeric units in which two Ag(PBu₃)₂[CMe₃COO] mols. are linked by two Ag-O bonds (2.626 Å). The closest coordination environment of the silver atom consists of two oxygen atoms with average Ag-O distances of 2.38 Å and one phosphorous atom with a Ag-P distance of 2.326 Å. The crystal structure of II is formed by infinite rows of [Ag(Phen)₂]⁺ cations between which [CF₃COO]⁻ anions are arranged. Relations between volatility and crystal structures of I and II are discussed.

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

ST silver pivalate fluoroacetate phosphine phenanthroline prepⁿ
structure; carboxylate silver prepⁿ structure thermolysis;
crystal structure silver pivalato trifluoroacetate

IT Crystal structure

Molecular structure

Thermal decomposition

(of silver pivalato tributylphosphine complex and
silver phenanthroline trifluoroacetate salt)

IT Molecular structure-property relationship

(volatility; of silver pivalato tributylphosphine complex and
silver phenanthroline trifluoroacetate salt)

IT 544671-55-8P

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP

(Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
 (preparation, crystal structure and sublimation)

IT 544679-46-1P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation, crystal structure and thermal decomposition)

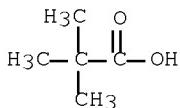
IT 2966-50-9, Silver trifluoroacetate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for preparation of bis(phenanthroline)silver(I) trifluoroacetate salt)

IT 998-40-3, Tributylphosphine 7324-58-5, Silver(I) pivalate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for preparation of silver pivalato tributylphosphine complex)

IT 7324-58-5, Silver(I) pivalate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for preparation of silver pivalato tributylphosphine complex)

RN 7324-58-5 HCPLUS

CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L113 ANSWER 7 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2001:861432 HCPLUS Full-text
 DOCUMENT NUMBER: 136:140609
 TITLE: Thermodynamic study of silver pivalate and its complex with tri(n-butyl)phosphine
 Malkerova, I. P.; Paramonov, S. E.; Alikhanyan, A. S.; Kuz'mina, N. P.
 AUTHOR(S):
 CORPORATE SOURCE: Inst. Obshchei i Neorg. Khim. im. N. S. Kurnakova, RAN, Moscow, Russia
 SOURCE: Zhurnal Neorganicheskoi Khimii (2001), 46(10), 1700-1703
 CODEN: ZNOKAQ; ISSN: 0044-457X
 PUBLISHER: MAIK Nauka/Interperiodica Publishing
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 AB The authors used the Knudsen effusion method and gas-phase mass spectrometric anal. to study thermodyn. characteristics of $(\text{CH}_3)_3\text{CCOOAg}$ and its complex $(\text{CH}_3)_3\text{CCOOAg}:\text{P}(n\text{-Bu})_3$. The sublimation enthalpies of these compds. were determined as well as the composition of the gas phase and the partial pressures; the complex sublimes congruently. A comparative anal. of the thermal stability of the two compds. was done.
 CC 69-2 (Thermodynamics, Thermochemistry, and Thermal Properties)

Section cross-reference(s): 67, 78

ST thermodn silver pivalate complex butyl phosphine; sublimation enthalpy silver pivalate complex butyl phosphine; thermal decompn enthalpy silver pivalate

IT Partial pressure
Sublimation enthalpy
Thermal decomposition
Thermal decomposition enthalpy
(thermodn. study of silver pivalate and its complex with tri(n-butyl)phosphine)

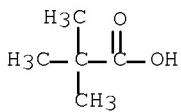
IT 380376-07-8
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(thermodn. study of silver pivalate and its complex with tri(n-butyl)phosphine)

IT 7324-58-5, Silver pivalate
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(thermodn. study of silver pivalate and its complex with tri(n-butyl)phosphine)

IT 7324-58-5, Silver pivalate
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(thermodn. study of silver pivalate and its complex with tri(n-butyl)phosphine)

RN 7324-58-5 HCPLUS

CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

L113 ANSWER 8 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2001:430162 HCPLUS [Full-text](#)
 DOCUMENT NUMBER: 135:174284
 TITLE: Synthesis and structure of acetonitrile solvates of copper(II) monofluoroacetate and silver(I) trifluoroacetate, $[\text{Cu}_2(\text{CH}_2\text{FCOO})_4 \cdot 2\text{CH}_3\text{CN}]$ (CH_3CN) and $\text{Ag}_3(\text{CF}_3\text{COO})_3(\text{CH}_3\text{CN})_2$
 AUTHOR(S): Karpova, E. V.; Boltalin, A. I.; Korenev, Yu. M.; Zakharov, M. A.; Troyanov, S. I.
 CORPORATE SOURCE: Moscow State University, Moscow, 119899, Russia
 SOURCE: Russian Journal of Coordination Chemistry (Translation of Koordinatsionnaya Khimiya) (2001), 27(4), 286-291
 CODEN: RJCCEY; ISSN: 1070-3284
 PUBLISHER: MAIK Nauka/Interperiodica Publishing
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 135:174284

AB [Cu₂(CH₂FCOO)₄·2MeCN] (MeCN) (1) and Ag₃(CF₃COO)₃ (MeCN)₂ (2) were synthesized and studied by x-ray structural anal. Crystals 1 are monoclinic, space group C2/c, *a* 27.854(6), *b* 8.286(2), *c* 19.428(4) Å, β 106.82(3)°, *Z* = 8, *R*₁ = 0.0426; crystals of 2 are triclinic, space group P.hivin.1, *a* 8.676(2), *b* 9.819(2), *c* 11.961(2) Å, α 95.27(3), β 109.59(3), γ 104.60(3)°, *Z* = 2, *R*₁ = 0.0252. 1 Is composed of the structural units (lanterns) typical of Cu(II) carboxylates. The presence of an addnl. MeCN mol. noncoordinated by the Cu atoms makes it possible to consider 1 as a lattice clathrate. 2 Has no analogs among the Ag carboxylates. It simultaneously contains Ag atoms with coordination nos. varying from 2 to 4.

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75

ST crystal structure copper silver fluoroacetate acetonitrile;
copper monofluoroacetato acetonitrile dinuclear prepn structure;
silver trifluoroacetato acetonitrile polymeric prepn structure

IT Crystal structure
Molecular structure
(of copper(II) monofluoroacetate and silver(I)
trifluoroacetate acetonitrile complexes)

IT 353793-50-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure)

IT 353793-53-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of polymeric)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L113 ANSWER 9 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:147349 HCPLUS Full-text

DOCUMENT NUMBER: 134:304637

TITLE: Synthesis and thermal stability of silver carboxylates: crystal structure of silver pivalate

AUTHOR(S): Paramonov, S. E.; Mychlo, E. V.;
Troyanov, S. I.; Kuz'mina, N. P.

CORPORATE SOURCE: Mosk. Gos. Univ. im. M. V. Lomonosova, Moscow, Russia

SOURCE: Zhurnal Neorganicheskoi Khimii (2000), 45(12),
2003-2008

CODEN: ZNOKAQ; ISSN: 0044-457X

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The reaction of aqueous solns. of AgNO₃ and K carboxylates gave Ag (O₂CR) (*R* = Pr, iso-Pr, tert-Bu, iso-Bu) which were characterized by IR spectra, thermal anal. and elemental anal. The crystal structure of Ag(O₂CBu) was determined [triclinic, space group P.hivin.1, *Z* = 4, *R*₁ = 0.0517, *wR*₂ = 0.1515]. The crystal structure consists of a polymeric chain, formed by silver pivalate dimers. The thermal decomposition of Ag(O₂CR) was studied in N under 1 atmospheric pressure; the carboxylates decompose to Ag at 120-250°. With increased pressure Ag(O₂CR) sublime ate 220-250° and 0.01 mm pressure. The thermal stability and volatility of the carboxylates increased in the series iso-Pr < Pr < tert-Bu < iso-Bu.

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75

ST silver carboxylate prepn thermal stability volatility; crystal structure silver pivalate

IT Crystal structure
Molecular structure
(of silver pivalate)

IT Sublimation
 Thermal decomposition
 Thermal stability
 Volatility
 (silver carboxylates)

IT Carboxylic acids, preparation
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (silver; preparation and thermal decomposition and volatility)

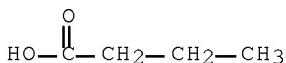
IT 5076-24-4P 24418-71-1P 334874-23-6P
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (preparation and thermal decomposition and volatility)

IT 7324-58-5P
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (preparation and thermal decomposition and volatility and crystal structure)

IT 589-39-9, Potassium butyrate 19455-20-0, Potassium isobutyrate
 19455-22-2 19455-23-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for preparation of silver carboxylates)

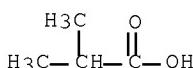
IT 5076-24-4P 24418-71-1P 334874-23-6P
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (preparation and thermal decomposition and volatility)

RN 5076-24-4 HCPLUS
 CN Butanoic acid, silver(1+) salt (1:1) (CA INDEX NAME)



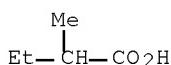
● Ag(I)

RN 24418-71-1 HCPLUS
 CN Propanoic acid, 2-methyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

RN 334874-23-6 HCPLUS
 CN Butanoic acid, 2-methyl-, silver(1+) salt (1:1) (CA INDEX NAME)



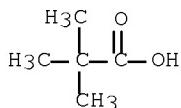
● Ag(I)

IT 7324-58-5P

RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (preparation and thermal decomposition and volatility and crystal structure)

RN 7324-58-5 HCAPLUS

CN Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1) (CA INDEX NAME)



● Ag(I)

L113 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:172088 HCAPLUS Full-text

DOCUMENT NUMBER: 130:231385

TITLE: Silver(I) mono- and trifluoroacetates:
 thermal stability and crystal structure

AUTHOR(S): Karpova, E. V.; Boltalin, A. I.; Korenev, Yu. M.;
 Troyanov, S. I.

CORPORATE SOURCE: Moscow State University, Moscow, 119899, Russia

SOURCE: Russian Journal of Coordination Chemistry (Translation
 of Koordinatsionnaya Khimiya) (1999), 25(1), 65-68
 CODEN: RJCCEY; ISSN: 1070-3284

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ag mono- and trifluoroacetates AgO₂CCH₂F (I) and AgO₂CCF₃ (II) were synthesized. The compds. were studied by DTA, x-ray powder and single-crystal diffraction, and high-temperature mass spectrometry. Metallic Ag and Ag fluoride are the products of thermal decomposition of I and II, resp. The composition of saturated vapor was determined for II; I decomps. on heating, but not sublimes. The crystal structures of the compds. were determined

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

ST silver fluoroacetate prepn structure thermal decompn; crystal structure silver fluoroacetate

IT Crystal structure

Molecular structure

Thermal decomposition

(of silver fluoroacetates)

IT 38845-51-1P 221073-81-0P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)
(preparation and crystal structure and thermal decomposition)
IT 76-05-1, reactions 144-49-0, Fluoroacetic acid 20667-12-3,
Silver oxide (Ag₂O)
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for preparation of silver fluoroacetates)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L113 ANSWER 11 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:131299 HCPLUS Full-text
DOCUMENT NUMBER: 130:245549
TITLE: Synthesis and crystal structure of metal(I) hydrogen
sulfates. Ag(H₃O)(HSO₄)₂, Ag₂(HSO₄)₂(H₂SO₄),
AgHSO₄, and Hg₂(HSO₄)₂
AUTHOR(S): Stiewe, A.; Kemnitz, E.; Troyanov, S.
CORPORATE SOURCE: Institut Chemie, Humboldt-Universitaet, Berlin,
D-10115, Germany
SOURCE: Zeitschrift fuer Anorganische und Allgemeine Chemie
(1999), 625(2), 329-335
CODEN: ZAACAB; ISSN: 0044-2313
PUBLISHER: Johann Ambrosius Barth
DOCUMENT TYPE: Journal
LANGUAGE: German
AB Ag(H₃O)(HSO₄)₂, Ag₂(HSO₄)₂.(H₂SO₄), and AgHSO₄ were synthesized from Ag₂SO₄
and H₂SO₄. Hg₂(HSO₄)₂ was obtained from metallic Hg and 96% H₂SO₄ as starting
materials. The compds. were characterized by x-ray single crystal structure
determination. Ag(H₃O)(HSO₄)₂ belongs to the structure type of Na(H₃O)(HSO₄).
The Ag atom is coordinated by 6 + 2 O atoms. In the structure, there are
dimers and chains of H-bonded HSO₄⁻ tetrahedra. Dimers and chains are
connected by the H₃O⁺ ion to form a 3D H network. Ag₂(HSO₄)₂(H₂SO₄)
crystallizes isotropic to Na₂(HSO₄)₂(H₂SO₄). The coordination number of Ag is
6 + 1. The structure of Ag₂(HSO₄)₂(H₂SO₄) is characterized by H-bonded
trimers of HSO₄⁻ tetrahedra, which are further connected to chains. For the
recently published structure of AgHSO₄ the H bonding system was discussed.
There are tetrameres and chains, connected by bifurcated H bonds. The
structure of Hg₂(HSO₄)₂ contains Hg²⁺ cations with Hg-Hg distance of 2.509 Å.
Every Hg atom is coordinated by 1 O atom at shorter distance (2.18 Å) and 3 O
atoms at longer distances (2.57 to 3.08 Å). The HSO₄⁻ tetrahedra form zigzag
chains by H bonds.

CC 78-5 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
ST bisulfate mercury silver prepn crystal structure; sulfate
mercury silver prepn crystal structure; hydrogen bonding mercury
silver bisulfate
IT Crystal structure
(of mercury/silver bisulfates)
IT 16156-13-1P 55605-38-4P 221231-16-9P 221231-23-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)
IT 7439-97-6, Mercury, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for preparation of mercury bisulfate)
IT 7664-93-9, Sulfuric acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for preparation of mercury/silver bisulfates)
IT 10294-26-5, Silver sulfate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for preparation of silver bisulfates)

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS

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RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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